pies a fluoroscopy room for the same period, and it requires an investment in a side-viewing endoscope that has little other use. The appropriate instrument with accessories costs as much as $10,000. So far, the risk to the patient appears to be minimal. A few patients have mild abdominal pain and fever after the examination. Elevation of the serum amylase, sometimes to high levels, is noted regularly. The first case of fatal necrotizing pancreatitis following the procedure was reported recently. Infection of pancreatic pseudocysts may occur.

Answers are being sought to the questions of how many endoscopists should take the time to acquire the expertise necessary to perform the cannulation, which and how many patients should have the study, and what the significance of the radiographic findings is. Finally, it must be determined if the results sufficiently alter therapy and diminish morbidity and mortality to justify the cost and risk to the patient and the expenditure of the physician's time.

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Osteomyelitis in Drug Addicts

HEMATOGENOUS OSTEOMYELITIS, predominantly spondylitis, is an increasingly frequent complication of intravenous drug abuse. The bacteria causing these infections are unusual, consisting largely of Pseudomonas aeruginosa or Klebsiella aerobacter. Because of the destructive nature of these pyogenic infections, it is essential to establish the diagnosis immediately and to determine the causative organism in order to institute appropriate therapy.

Any patient with a history of intravenous drug abuse with localized skeletal pain should be suspected of having osteomyelitis, although early radiographs are often normal. Frequently, radioactive isotope bone scans which reflect increased osteoblastic activity will be positive before bone destruction can be detected on routine radiographs. Needle aspiration or bone biopsy will often yield the specific organism for sensitivity studies; however, this may require multiple attempts.

Between 1969 and 1971, 32 cases of skeletal infection in drug abuse patients were diagnosed at Los Angeles County-University of Southern California Medical Center. Sixty-six percent of the cases involved the spine or sacroiliac joint and 18 percent involved the area around the wrist or sternoclavicular joint. The radiographic findings in these areas were indistinguishable from tuberculosis, and, in fact, this form of osteomyelitis was seen ten times more frequently than tuberculosis.

Delays (averaging two months) in diagnosis and treatment occurred for the following reasons: (1) Lack of awareness of the association of intravenous drug abuse and osteomyelitis; (2) dismissal of patients as normal when radiographs were normal, without requesting bone scans; (3) positive radiographs frequently attributed to tuberculosis; (4) treatment of patients with Gram positive or broad spectrum antibiotics without bacteriological confirmation.

Successful therapy was accomplished when specific antibiotic therapy utilizing gentamicin or a combination of gentamicin and carbenicillin was instituted.

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Echocardiography and the Radiologist

OFTEN THE RADIOLOGIST is consulted by the clinician as to the cause of cardiomegaly initially diagnosed on radiographic examination of the chest. In many instances the history is of no help, there are no previous films for comparison, the electrocardiogram findings are equivocal and the patient's illness so acute that treatment must be begun promptly.

The armamentarium of the radiologist, until recently, included two types of examination: radioisotope studies and CO_2 infusion into the right atrium. These were mainly designed to exclude

the presence of pericardial fluid, but had definite limitations. The former technique requires 500 ml of fluid for positive identification and the latter specifies the absence of fluid in the right pleural space. Both examinations must be performed by experienced personnel within their respective departments, and the patient must be transported to the equipment.

The advent of improved techniques in diagnostic ultrasound eliminates the need of several of the above requirements; now the equipment is easily transported to the patient's bedside, the amount of pericardial fluid that can be reliably detected is in the range of 100 to 200 ml, and the presence of pleural fluid is not a factor.

There are additional benefits derived from the echocardiographic examination, and much more information than merely the presence or absence of pericardial fluid is available. These additional data include mitral valve function, cardiac chamber size, myocardial dimensions, contractile physiology, estimation of stroke volume, ejection fractions, intracardiac tumors, and dyskinetic segments of the posterior left ventricular wall.

The equipment is relatively inexpensive and the technique when utilized by a trained radiologist is non-traumatic and a valuable tool in cardiac diagnosis.

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Renal Function Following Double Dose Infusion Intravenous Cholangiography

A STUDY OF TEN PATIENTS following intravenous infusion of 40 ml of iodipamide methylglucamine diluted with normal saline solution to 100 ml, administered in a half-hour period, resulted in an increase in uric acid clearance and a decrease in free water clearance. There were no changes in clearance of inulin, paraminohippuric acid, osmoles, urine pH or calculated renal blood flow. Opacification of the biliary ducts was above average in eight of the ten patients studied.

The changes in renal function after slow infusion of iodipamide methylglucamine were not associated with any discernible deleterious effect. However, the combination of increasing uric acid excretion rate plus increasing urinary concentration would seem to increase the potential for uric acid nephropathy.

Consequently, it would be advisable to hydrate the patient before intravenous cholangiography. Since the rapidity of injection may have other hemodynamic effects, including an increase in kidney size, changes in plasma volume and a reduction in renal blood flow, it also appears safer to use a slow infusion technique.

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Noninvasive Radionuclide Myocardiography with Radioactive Potassium

THE COMBINATION of exercise stress testing with precordial scanning after intravenous injection of radioactive potassium provides a new approach to noninvasive evaluation of regional myocardial perfusion.

Conventional coronary arteriography demonstrates the location and extent of obstruction in the coronary vasculature. Direct injection of radionuclides into the coronary arteries gives further information about blood flow across stenotic coronary arteries and the perfusion of the myocardium distal to obstruction. However, this procedure also requires cardiac catheterization with its attendant risks.

The intravenous injection of radioisotopes of potassium, cesium, and rubidium and also radioiodinated fatty acids has been used in precordial imaging to successfully demonstrate regions of transmural scar. Currently, potassium-43 is the radionuclide of choice. Exercise stress compromises the perfusion of the vascular bed supplied by stenotic major coronary arteries or collateral vessels. Its addition to the procedure of noninvasive imaging allows delineation of the areas of perfusion deficit in patients with coronary atherosclerosis resulting in angina pectoris rather than infarct.

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